General information

Wellbore name	6504/5-1 S
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Well name	6504/5-1
Seismic location	WHH2002 R05 trace 3964 & line 3099
Production licence	324
Drilling operator	Eni Norge AS
Drill permit	1137-L
Drilling facility	TRANSOCEAN LEADER
Drilling days	90
Entered date	31.03.2007
Completed date	28.06.2007
Release date	28.06.2009
Publication date	28.06.2009
Purpose - planned	WILDCAT
Reentry	NO
Content	DRY
Discovery wellbore	NO
Kelly bushing elevation [m]	24.0
Water depth [m]	1190.0
Total depth (MD) [m RKB]	4193.0
Final vertical depth (TVD) [m RKB]	4090.0
Maximum inclination [°]	29.4
Bottom hole temperature [°C]	130
Oldest penetrated age	LATE CRETACEOUS
Oldest penetrated formation	LANGE FM
Geodetic datum	ED50
NS degrees	65° 41' 38.46'' N
EW degrees	4° 22' 43.92'' E
NS UTM [m]	7286683.33
EW UTM [m]	563330.14
UTM zone	31
NPDID wellbore	5518

Wellbore history

General

The Gemini well 6504/5-1 S is a wildcat well located in 1190 m water depth, far west in the Møre/Vøring Basin in the Norwegian Sea. The main purpose of the well was to test the Late Cretaceous Lysing and Nise intervals for hydrocarbons. The primary target was the Lysing Sandstones, while the Nise Sandstones were a secondary target.

Operations and results

The semi-submersible installation Transocean Leader was anchored using a pre-laid mooring system that was installed on location a few months prior the rig arrival in a proper weather window for the Anchor handling vessels. Thanks to this only 36 hours were necessary for anchoring prior to start drilling operations. Well 6504/5-1 S was spudded on 28 June 2007 and drilled to TD at 4170 m in Late Cretaceous sediments of the Lange Formation. The main operational problem during drilling was due two BOP failures. Both times the BOP was disconnected and pulled out for inspection and repair. Several components were changed, and the BOP was tested successfully both times prior to continue operations on surface and after landed and latched to wellhead. The BOP problems were the main cause of unproductive time in the well. During drilling the 8 1/2 section several losses were seen, and a kick was taken at 3521 m. A 7" liner was then installed in order to reach the well target in 5 7/8" hole. The well was drilled with Seawater and hi-vis sweeps with pre-hydrated bentonite mud down to 1592 m, with Ultradril mud from 1592 m to 1963 m, and with Formix mud from 1963 m to TD. No logs were run above 1600 m; however LWD logs were run in a pilot hole drilled by Fugro one year ahead of the 6504/5-1 S.

The primary target Lysing Sandstones were shaled out with only thin sand laminations and thin layers present. The secondary target Nise Sandstones were also shaled out. In the Lange Formation three connection / pump off gas peaks to 3.0% above background were recorded between 3486 - 3504 m and the well kicked at 3521 m. Oil shows were absent in the well.

No cores were cut and no wire line fluid samples were taken.

The well was permanently abandoned on 28 June 2007 as a dry well.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1610.00	4165.00

Cuttings available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
1213	NORDLAND GP
1213	NAUST FM
1510	HORDALAND GP
1510	BRYGGE FM
1687	ROGALAND GP
1687	TARE FM
1774	TANG FM
1850	SHETLAND GP
1850	SPRINGAR FM
2190	NISE FM
2660	KVITNOS FM
3441	CROMER KNOLL GP
3441	LANGE FM

Composite logs

Document name	Document format	Document size [MB]
5518	pdf	0.52

Logs

Log type	Log top depth [m]	Log bottom depth [m]
EDTC MSIP HRLA HNGS ECS PEX	1945	2880
GR HRLA DSI PPC	3299	4138
GR HRLA TLD CNL ECS HNGS	3512	4085
MSCT GR	1996	2828
MSCT GR	3548	3925
MWD - GR RES DIR ECD	3521	3620
MWD - GR RES DIR SON ECD	1600	3521
VSI GR	1960	3996

Casing and leak-off tests

Casing type	Casing diam. [inch]	Casing depth [m]	Hole diam. [inch]	Hole depth [m]	LOT/FIT mud eqv. [g/cm3]	Formation test type
CONDUCTOR	30	1240.0	36	1245.0	0.00	LOT
SURF.COND.	20	1591.0	26	1596.0	1.20	LOT
INTERM.	13 3/8	1950.0	17 1/2	1955.0	1.27	LOT
INTERM.	9 5/8	3091.0	12 1/4	3095.0	1.56	LOT
LINER	7	3510.0	8 1/2	3521.0	0.00	LOT
OPEN HOLE		4170.0	5 7/8	4170.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
1208	1.12	12.0		FORMATE POLYMER	
1498	1.11	12.0		FORMATE POLYMER	
1600	1.03			SPUD MUD	
1656	1.12	12.0		ULTRADRIL DW	
1792	1.20	12.0		FORMATE POLYMER	
1963	1.12	16.0		ULTRADRIL DW	
1966	1.20	10.0		FORMATE POLYMER	
2347	1.20	10.0		FORMATE POLYMER	
3100	1.21	12.0		FORMATE POLYMER	
3191	1.27	13.0		FORMATE POLYMER	
3508	1.48	19.0		FORMATE POLYMER	
3521	1.55	21.0		FORMATE POLYMER	
3524	1.55	18.0		FORMATE POLYMER	
3619	1.57	20.0		FORMATE POLYMER	
3993	1.57	20.0		FORMATE POLYMER	
4005	1.57	21.0		FORMATE POLYMER	
4166	1.60	18.0		FORMATE POLYMER	